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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/798,650	03/11/2004	Jianying Li	140536	6325

7590 05/13/2009

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EXAMINER	
MOTSINGER, SEAN T	

ART UNIT	PAPER NUMBER
2624	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/798,650	LI ET AL.	
	Examiner	Art Unit	
	SEAN MOTSINGER	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 February 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3,5-17,19-31 and 33-42* is/are pending in the application.

4a) Of the above claim(s) *7-14,21-28 and 35-42* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,5-17,19-31 and 33-42* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Response to Applicants Arguments/Amendments

Applicants Arguments/Amendments filed on 2/3/2009 have been entered and made of record.

Regarding applicants arguments with respect to 35 U.S.C. 101 applicant's arguments have been fully considered but are not persuasive, the steps "tied to" a specific apparatus appears to be only insignificant post solution activity. *The examiner suggests performing the "utilizing" step in the computed tomographic system.*

Furthermore applicants removal of the subject matter which defines a computer readable medium as a signal. This appears to attempt to alter the scope of the claim by amending the specification. This is new matter and the claim has interpreted based on the scope of the originally filed specification. *The examiner suggests amending the claim to "computer storage medium".*

Regarding the rejections under 35 U.S.C. 112 to claims 15-20 the amendments to these claims appear to have overcome the 112 rejection however now raise issues under 35 U.S.C. 101.

Regarding applicants arguments with respect to the rejections under 35 U.S.C. 102 Applicants arguments have been fully considered but are not persuasive. Computed tomography implies 3d imaging, therefore Li discloses three dimensional projections.

Furthermore from column 3 lines 35-45 there are multiple slices indicating 3 dimensional data.

Regarding applicants arguments on page 14 with respect to the 103 rejections of claims 30-31. These claims were rejected for similar reasons as claims 2 and 3 respectively. Here it is explained with supporting evidence from Li why it would have been obvious to try a number of thresholds other then three. Applicant cites a concluding statement of these arguments, but fails to address the evidence explained above from which this conclusion was based. Therefore applicants argument that the examiner provides nothing more then a conclusory statement is rejected.

Objections to the Specification

The amendment filed on 2/3/2009 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: The specification deletes information from the specification which alters the scope of the specification which is adding new matter.

Applicant is required to remove the new matter in the reply to this Office Action.

Rejections Under 35 U.S.C. 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-3, 5-6, 15-20 and 29-34 rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claim(s) 1-3, 5 and 6 is/are rejected under 35 U.S.C. 101 as not falling within one of the four statutory categories of invention. Supreme Court precedent[1] and recent Federal Circuit decisions[2] indicate that a statutory "process" under 35 U.S.C. 101 must (1) be tied to another statutory category (such as a particular apparatus), or (2) transform underlying subject matter (such as an article or material) to a different state or thing. While the instant claim(s) recite a series of steps or acts to be performed, the claim(s) neither transform underlying subject matter nor positively tie to another statutory category that accomplishes the claimed method steps, and therefore do not qualify as a statutory process. For example the thresholding and utilizing steps are could be performed with out use of a computer. Note the CT imagining apparatus comprises only insignificant pre-solution activity and insignificant post solution activity. The claims also do not transform underlying subject matter. The examiner suggests performing the Utilizing step in the computed tomographic system.

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[1] *Diamond v. Diehr*, 450 U.S. 175, 184 (1981); *Parker v. Flook*, 437 U.S. 584, 588 n.9 (1978); *Gottschalk v. Benson*, 409 U.S. 63, 70 (1972); *Cochrane v. Deener*, 94 U.S. 780, 787-88 (1876).

[2] *In re Bilski*, 88 USPQ2d 1385 (Fed. Cir. 2008).

Claim(s) 15-17, 19-21 is/are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter as follows. These claims define a "apparatus". However, the body of the claim lacks definite structure indicative of a physical apparatus the claim only recites "modules" which may only be computer software modules. Furthermore, the specification indicates that the invention may be embodied as pure software see paragraph 30. Therefore, the claim as a whole appears to be nothing more than a "apparatus" of software elements, thus defining functional descriptive material per se.

Claim(s) 29-34 is/are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter as follows. Claims 29-34 are drawn to functional descriptive material recorded on a computer readable medium. Normally, the claim would be statutory. However, the originally filed specification, defines or exemplifies the claimed computer readable medium as encompassing statutory media such as a "CD-ROM" or "DVD" etc, as well as ***non-statutory*** subject matter such as a "signal" i.e. the "internet" or "a network" .

"A transitory, propagating signal … is not a "process, machine, manufacture, or composition of matter." Those four categories define the explicit scope and reach of

subject matter patentable under 35 U.S.C. § 101; thus, such a signal cannot be patentable subject matter." (*In re Nuijten*, 84 USPQ2d 1495 (Fed. Cir. 2007)). Because the full scope of the claim as properly read in light of the disclosure appears to encompass non-statutory subject matter (i.e., because the specification defines/exemplifies a computer readable medium as a non-statutory signal, carrier waver, etc.) the claim as a whole is non-statutory. The examiner suggests amending the claim to *include* the disclosed tangible computer readable storage media, while at the same time *excluding* the intangible transitory media such as signals, carrier waves, etc. Any amendment to the claim should be commensurate with its corresponding disclosure.

Rejections Under 35 U.S.C. 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 5-6, 15, 19-20 and 29, 33-34 rejected under 35 U.S.C. 102(b) as being anticipated by Li et al US 6,449,330.

Re claim 1 Li discloses A method for reconstructing an image of an object, said method comprising: scanning an object using a computed tomographic (CT) imaging apparatus

(column 3 lines 25-30) to acquire projections of the object; determining a set of thresholds utilizing said projections (column 4 lines 5-10); associating selected smoothing kernels with said thresholds (column 4 lines 10-20); utilizing said smoothing kernels (column 4 lines 35-40) and said projections (column 4 lines 35-40) to produce three dimensional (See column 3 lines 35-40) smoothed projections (final projections column 4 lines 35-50) in accordance with said thresholds; and filtering and backprojecting the three dimensional smoothed projections (reconstructing column 4 lines 50-55) to generate an image of the object (column 4 lines 50-55).

Re claim 5 Li discloses wherein said utilizing smoothing kernels and said projections to produce smoothed projections comprises utilizing a smoothing gain factor to modulate smoothing of said smoothed projections (column 4 lines 45-50).

Re claim 6 Li further discloses wherein said smoothing gain factor is a function of said projections (column 4 lines 45-50).

Re claim 15 ad 19-20 These claims, recite a ct scanner for performing the method of claims 1, 5 and 6 respectively. Li discloses performing the method in a CT scanner as well see column 3 lines 25-30).

Re claim 29 and 33-34. These claims, recite a computer readable medium storing instructions for performing the method of claim 1, 5 and 6 respectively. Li discloses a computer readable medium see column 5 lines 15-20).

Rejections Under 35 U.S.C. 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 2-3,16-17, and 30-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Li.

Re claim 2 Li further discloses wherein a smoothing kernel is associated with each threshold (column 4 lines 35-40). Li further discloses the set of thresholds contains more the one threshold and in one embodiment the set of thresholds includes three thresholds (column 4 lines 1-10). Li does not specifically recite that 4 thresholds could be used, however It is clear from the claim language of claim 1 and column 4 lines 1-10 that Li intents the set of thresholds to be discretionary and not necessarily limited 3 (i.e Li implies that other numbers of threshold greater then 1 may be implemented.)

Therefore it would be obvious to one of ordinary skill in the art to try a number of thresholds not equal to 3 but greater then 1. The most obvious numbers to try would be 2 and 4 since they are closest to 3. Therefore it would have been obvious to one of ordinary skill in the art to implement Li with 4 thresholds.

Re claim 3 Li further discloses wherein a one-to-one correspondence exists between said smoothing kernels and said thresholds (column 4 lines 35-45).

Re claim 16 and 17 These claims, recite a ct scanner for performing the method of claims 2 and 3 respectively. Li discloses performing the method in a CT scanner as well see column 3 lines 25-30).

Re claim 30 and 31. These claims, recite a computer readable medium storing instructions for performing the method of claim 2 and 3 respectively. Li discloses a computer readable medium see column 5 lines 15-20).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SEAN MOTSINGER whose telephone number is (571)270-1237. The examiner can normally be reached on 9-5 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on (571)272-7453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Bhavesh M Mehta/
Supervisory Patent Examiner, Art Unit 2624

Motsinger
5/6/2009